

REMARKS

The Pending Claims

Claims 1-37 are pending currently. Claims 1-21 are directed to a method for producing a polishing pad comprising providing a porous polymer structure, compressing at least a region of the porous polymer structure to provide a translucent region, and forming a polishing pad comprising the porous polymer structure, whereby a polishing pad is produced comprising the translucent region. Claims 22-24 are directed to a polishing pad produced by the method above. Claims 25-29 are directed to a polishing pad comprising a region that is at least translucent, wherein the translucent region is porous. Claims 30-33 are directed to a method of polishing a substrate using a polishing pad produced by the method above. Claims 34-37 are directed to a method of polishing a substrate using a polishing pad comprising a region that is at least translucent, wherein the translucent region is porous. Reconsideration of the pending claims is respectfully requested.

Discussion of the Amendments to the Claims

Claims 5 and 6 have been amended to recite that the porous polymer structure is compressed to a thickness that is about 10-50% of its thickness prior to compression, as supported by the instant specification, for example, at page 4, paragraph [0011]. Claims 22, 30, and 34 have been amended to include the features of claims 1, 22, and 25, respectively, and are now in independent form. No new matter has been added by way of these amendments.

Summary of the Office Action

Claims 5, 6, and 22-37 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Claims 1-6, 8-11, 18, and 21-27 stand rejected under 35 U.S.C. § 103(a) as obvious over Roberts et al. (i.e., U.S. Patent 6,387,312) in view of Budinger et al. (i.e., U.S. Patent 4,927,432). Claims 30-37 stand rejected under 35 U.S.C. § 103(a) as obvious over Roberts et al. in view of Budinger et al. and Lustig et al. (i.e., U.S. Patent 5,433,651).

Discussion of the Indefiniteness Rejections

The indefiniteness rejections are moot in view of the amendments to the claims. Specifically, claims 5 and 6 have been amended to recite that the porous polymer structure is compressed to a thickness that is about 10-50% of its thickness prior to compression. Claims 22, 30, and 34 have been amended to be in independent form. Accordingly, the indefiniteness rejections should be withdrawn.

Discussion of the Obviousness Rejections

The obviousness rejections are respectfully traversed.

Roberts et al. does not teach or suggest providing a porous polymer structure and compressing at least a region of the porous polymer structure to provide a translucent region. Rather, Roberts et al. discloses solidifying a flowable (e.g., molten) polymeric material in a mold so as to form a polishing pad article. Through control of the cooling rate within the mold, a portion of the solidified polymeric material can be rendered opaque or transparent as a result of differences in the crystallinity of the solidified polymeric material. Although Roberts et al. discloses "compression molding" as a suitable molding technique (see Roberts et al., col. 4, line 61), this is fundamentally different from the method recited in the pending claims. In compression molding, a polymeric material is heated under elevated pressures so as to cause it to flow into a mold chamber. The application of pressure is used to render the polymer material flowable and to force excess molten polymer material out of the mold chamber. Accordingly, the method of Roberts et al. does not involve compression of a polymer structure, let alone a porous polymer structure, as recited in the pending claims, but rather compression of a flowable polymeric material having no structure. Nothing in Roberts et al. teaches or suggests that the method disclosed therein could be applied to a porous polishing pad material as disclosed by Budinger et al. Indeed, there is nothing in either Roberts et al. or Budinger et al. that recognizes that a region of a porous polymer structure can be compressed to produce a translucent region.

Moreover, nothing in Roberts et al. or Budinger et al. teaches or suggests a polishing pad produced by providing a porous polymer structure and compressing a region of the porous polymer structure to provide a translucent region, or the use of such a polishing pad in a method of chemical-mechanical polishing. In the polishing pad of the invention recited in claim 22, the non-compressed region of the porous polymer structure and the compressed translucent region of the porous polymer structure will have a continuous polymeric structure. Nothing in Roberts et al. or in Budinger et al. teaches or suggests that the method of Roberts et al. can be modified in any way so as to arrive at a porous polishing pad material comprising a translucent region with a continuous polymeric structure.

Furthermore, nothing in Roberts et al. or Budinger et al. teaches or suggests a polishing pad comprising a region that is at least translucent and is porous, or its use in a method of chemical-mechanical polishing, as recited in the pending claims. Roberts et al. only discloses a polishing pad comprising a translucent region, wherein the polishing pad and

translucent regions are both non-porous. Budinger et al. is silent with respect to optical transparency irrespective of the presence or absence of pores.

Lustig et al. fails to satisfy the deficiencies of Roberts et al. and Budinger et al. described above. Lustig et al. does not teach or suggest a method of compressing at least a region of a porous polymer structure so as to produce a translucent region. In addition, Lustig et al. does not teach or suggest a polishing pad in which the non-compressed and compressed translucent regions of the porous polymer structure have a continuous polymeric structure or a polishing pad in which the translucent region (i.e., compressed region) is porous.

Since the cited references fail to disclose each and every element of the invention as recited in the pending claims, the obviousness rejections are improper and should be withdrawn.

Conclusion

The application is considered in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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